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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,574	12/04/2003	Shihe Fan	48679	5066
2048	7590	07/05/2006	EXAMINER	
KIRBY EADES GALE BAKER BOX 3432, STATION D OTTAWA, ON K1P 6N9 CANADA			PARA, ANNETTE H	
			ART UNIT	PAPER NUMBER
			1661	

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/726,574	Applicant(s) FAN ET AL	
	Examiner Annette H. Para	Art Unit 1661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 33-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>April 2005</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claims 33-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group, there being no allowable generic or linking claim. Applicant timely traversed the restriction requirement in the reply filed on March 20, 2006. Applicant argues that the subject matter of claim 1-32 on the one hand and claims 33-44 on the other hand are believed to relate to a single inventive concept and should be pursued in a single application.

Applicant's arguments filed on March 20, 2006 have been fully considered, but they are not persuasive.

A search on one Group will not find art on the other, because a search on a nutrient medium is not going to find art on a method of growing an autotrophic seedling. Therefore the searches being not coextensive claims 1-32 and claims 33-44 are two different inventive concepts.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper and is maintained.

Listing of the Claims

Claims 1-32 are examined. Claims 33-44 have been withdrawn.

Claims objection

Claim 25 is objected to because of the following informalities:

On line 2, after the word "combination" the conjunction "or" should be changed to read --of--.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

An applicant shows possession of the claimed invention by describing the claimed invention with all its limitations." MPEP 2163. "Possession may be shown in many ways. For example, possession may be shown by describing an actual reduction to practice of the claimed invention. Possession may also be shown by a clear depiction of the invention in detailed drawings or in structural chemical formulas which permit a person skilled in the art to clearly recognize that applicant had possession of the claimed invention." MPEP 2163

"A lack of adequate written description issue also arises if the knowledge and level of skill in the art would not permit one skilled in the art to immediately envisage the product claimed from the disclosed process." MPEP 2163. "The analysis of whether the specification complies with the written description requirement calls for the examiner to compare the scope of the claim with the scope of the description to determine whether applicant has demonstrated possession of the claimed invention....

The claim is drawn to a method of growing somatic plant embryos providing a nutrient medium comprising solid component, which comprises equi-axial particles.

Applicants do not describe a nutrient medium comprising solid component, which comprises equi-axial particles. For instance, the skilled artisan would not know which solid component in the nutrient medium, comprises **equi-axial** particles. More over the skilled artisan would not have recognized that applicants were in possession of this medium comprising equi-axial particles.

Claims 11 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for methods of growing somatic plant embryos in a nutrient medium does not reasonably provide enablement for methods of growing somatic plant embryos in a nutrient medium comprising solid component, which comprises equi-axial particles. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The specification is not enabling for methods of growing somatic plant embryos in a nutrient medium comprising solid component, which comprises **equi-axial** particles. The specification only states that the specification may include equi-axial particles. The specification does not

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teach how to select the solid component comprising generally equi-axial particles. The solid component (peat-moss, alpha-cellulose fiber, clay, etc.) cited in the specification are composed of particles of different size and shape and very few of these particles are equi-axial. The specification does not teach a solid material mostly composed of equi-axial particles as it is claimed on claim 11 and does not teach a method to select equi-axial particles from these solid components.

Thus the disclosure does not contain sufficient evidence regarding the scope of subject matter claimed as to enable one skilled in the art to make and use the claimed invention commensurate with that claimed without undue experimentation. This is particularly true given the state of the prior art, the amount of experimentation necessary, the absence of guidance and working examples in the specification, and the unpredictable

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-14, 16, 18, 20, 23, 24, 27, 29-31, are rejected under 35 U.S.C.102 (b) as being clearly anticipated by Fan et al. (United States Patent No. 6, 444, 467 September 3, 2002)

The claims are drawn to a method of sowing a conifer species *ex vitro* in a medium comprising a nutrient medium comprising a solid component, within a flowable component containing water and a carbohydrate component, wherein the flowable component has being selected from the group consisting of a fluid and a semi-solid.

Fan et al. et al. teach a method of sowing naked somatic embryos (column 8, line 28) *ex vitro* in a nutrient medium comprising 1-9% of sucrose (column 4, line 10), solid, liquid and gas phases (column 3, lines 62-63) for growth into an autotrophic seedling. The solid components are but not restricted to

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vermiculite, perlite, peat (pulp of wood containing alpha cellulose), coconut husk fibres (which are flexible fibbers) and the like (column 8, lines 50-51) which, the instant specification teach are inert and may contain equi-axial particles (page 9, lines 6-7). The somatic embryos are held on the surface or above the surface of the medium by the mean of a physical support such as polypropylene materials (column 8, 43-44). Fan et al. also teach sowing somatic embryos in mini plug trays having their drainage holes covered by a mesh-like material to support the somatic embryos. These containers are then placed onto liquid germination media such that the embryos are in contact with but are not submerged in the liquid media (column 8, lines 59-67). The sowing of the somatic embryos can be practiced with a wide variety of non-sterilized growing substrates commonly used in conventional plant propagation (column 9, lines 12-16). Somatic embryos can be sprayed with fungicides, bactericides, antibiotics, nematocides, insecticides and the like (column 5, lines 60-62). Furthermore, Fan et al. teach plant growth regulator (column 4, line 11), mineral compounds, vitamins and amino acids (column 10, lines 45-65). Fan et al. teach a solid component comprising elongated particles (column 12, line 34). Finally Fan et al. teach growing *Pinus radiata*, *Pinus teada* (Loblolly pine), and *Picea glauca* (spruce) somatic embryos. The water used in Fan et al.'s nutrient has a viscosity. The solid component of Fan et al's nutrient medium inherently comprises equi-axial particles. When the somatic is sown onto the surface of the absorbent material (column 8, lines 55-58) it creates a depression in the solid surface.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15, 17, 19, 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fan et al. (United States Patent No. 6, 444, 467) in view of each of Pierik (In Vitro Culture of Higher Plants 1997),

The claims are drawn to a method of sowing a conifer species *ex vitro* in a medium comprising a nutrient medium comprising a solid component, within a flowable component containing water and a carbohydrate component. Wherein the flowable component has being selected from the group consisting of a fluid and a semi-solid.

The teachings of Fan et al. are discussed above

The prior art teaching of Fan et al. differs from the claimed invention as follows:

Fan et al. fail to teach nutrient medium comprising gelling agents

However,

Pierik teaches nutrient media comprising agar to form a gel (page 55).

At the time the invention was made it would have been obvious for one of ordinary in the art to modify the method of Fan et al. by adding agar mixed with the nutrient medium knowing that gelling agent serve as binding agent for nutrient and water. One of ordinary skill in the art would have been motivated to do that because adding this step will lower the maintenance of the germinant as no added water or nutrient will be needed because they will be contained in the gelling agent. Thus, the invention as a

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whole was clearly *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 21, 22, 25, 26, 28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fan et al. (United States Patent No. 6, 444, 467) in view of each of Gupta (United States Patent 5,563,061 1996) and of Tremblay et al. (Plant Cell, Tissue and Organ Culture 42: 39-46 1995).

The claims are drawn to a method of sowing a conifer species *ex vitro* in a medium comprising a nutrient medium comprising a solid component, within a flowable component containing water and a monosaccharide (glucose and fructose), oligosaccharides and combination of in the nutrient medium. Wherein the flowable component has being selected from the group consisting of a fluid and a semi-solid.

The teachings of Fan et al. are discussed above.

The prior art teaching of Fan et al. differs from the claimed invention as follows:

Fan et al. fail to teach the use of monosaccharides in the nutrient medium. Fan et al. fail to use glucose or fructose as carbohydrate. Fan et al. also fail to teach maltose as a carbohydrate nutrient.

Tremblay et al teach the use of monosaccharides (glucose and fructose), oligosaccharides and combination of in the nutrient medium.

Gupta teaches the use of 3% of maltose in embryos culture as a carbohydrate nutrient.

At the time the invention was made it would have been obvious for one of ordinary in the art to modify the method of Fan et al. by using monosaccharides oligosaccharides and combination of, knowing, as applicants state in the specification, 'that mixtures of simple carbohydrates as compared to monotype carbohydrate, may similarly promote or improve growth of conifer somatic germinants' (page 34).

Moreover, it would have been obvious for one of the ordinary in the art to use maltose as carbohydrate in light of the fact that Gupta teaches that maltose is a growth enhancer *in vitro*. Therefore, optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ. One of ordinary skill in the art would have been motivated to do that to obtain an economic return. Thus, the invention as a whole was clearly *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

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Conclusion

No claim is allowed.

Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Annette H Para whose telephone number is (571) 272-0982. The examiner can normally be reached Monday through Thursday from 5:30 a.m. to 4:00 p.m.

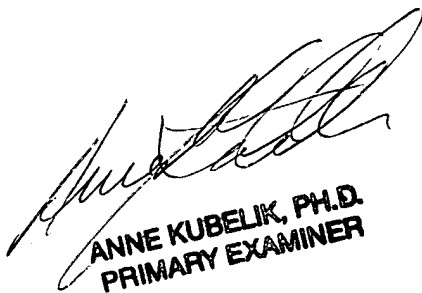
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached on (571) 272-0975. The fax number for the organization where the application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about PAIR system, see <http://pair-direct.uspto.gov> . Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Annette H Para

June 06, 2006



ANNE KUBELIK, PH.D.
PRIMARY EXAMINER